

# Town of Leesburg: Winter Storm Jonas After-Action Report



Historic  
Blizzard  
of 2016

# WINTER STORM JONAS

## AFTER-ACTION REPORT:

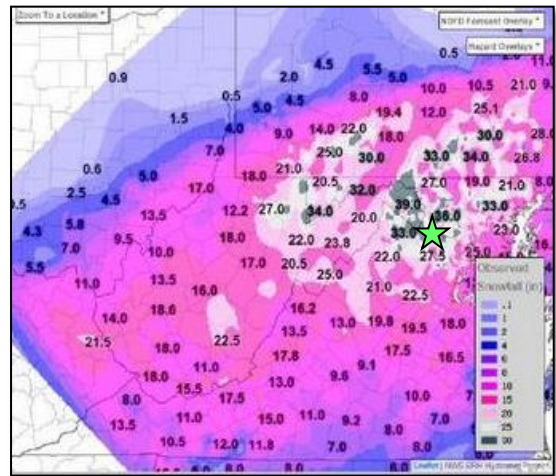
### Storm Background:

The first flakes of Winter Storm Jonas began falling in Leesburg around 12:30pm on Friday, January 22, 2016. Snow continued uninterrupted until Saturday evening around 10:30pm.

Blizzard conditions developed throughout the day on Saturday with high winds creating whiteout conditions. The winds also caused snow drifting that re-covered previously plowed roadways. Thirty four hours after it started, the storm finally ended in the region, leaving behind 34 inches of snow in Leesburg.

Leesburg and Loudoun County saw some of the highest snow accumulation totals from this storm among all impacted communities along the East Coast. In advance of the storm, Governor McAuliffe issued the State of Emergency Declaration for Virginia on Thursday, January 21 and the Town

Manager issued the Declaration of Local Emergency to be begin at 7:00am Friday morning, January 22. On the same day the Town also issued a separate snow emergency that meant that vehicles could no longer park along Snow Emergency Routes in the downtown.



Ranking of Top Five Snowfalls to hit Leesburg over the past 30 years:	
Date	Total Snow Amount
January 22/23, 2016	34 inches
February 5/6, 2010	28 inches*
February 9/10, 2010	16 inches (5 day total 44 inches)*
January 6/8, 1996	24.6 inches*
February 10/11, 1983	22.8 inches*
February 15/17, 2003	21.7 inches*
*- Snow totals measured at Dulles Airport	

### **General Winter Storm Preparedness:**

Leesburg's location in the mid-Atlantic region means that the winter climate is fairly moderate. Large snow storms are the exception, not the rule. Leesburg's average annual snowfall amount is 22 inches and in the typical year the Town experiences one or two snowfalls in the 6-10 inch range. Leesburg, like all other Town's in Virginia larger than 3,500 in population, is responsible for the maintenance and snow removal on secondary roads. Many years ago, the Town also assumed maintenance for many lane miles of primary roads in the Town. This gives the Town great flexibility and control over the maintenance, upkeep, and design of these roads. This also means that the Town is responsible for snow removal. See Appendix C for a detailed list of road maintenance responsibilities inside the Town's corporate limits.

The Town's staffing and fleet of snow removal equipment is designed to effectively and efficiently clear an 8-12 inch snowfall curb to curb within 2-3 days. Clearing larger storms, especially storms over 24 inches require different and more customized equipment. The Town's primary snow clearing equipment are 8 and 10 ton, single rear axle dump trucks. These trucks are able to effectively clear up to 18 inches of snow from roads. When snow is deeper than 18 inches, the trucks and blades are not heavy and strong enough to push the snow. In the case of Jonas, the rapid snowfall combined with blizzard conditions (high winds and drifting) meant that no secondary streets saw a Town truck until after the final snow flake fell. Approximately 200 lane miles of Town streets needed to have the first pass started or completely cleared by front end loaders. Unlike governments in the mid-Atlantic region, localities in more northern climates where significant snow storms are more frequent, invest in larger dump trucks, and more specialized equipment such as truck mounted snow blowers, V plows, and rubber tired loaders along with a higher ratio of clearing equipment per lane mile.



**10 Ton Dump Truck with Plow**

For Leesburg to make a significant investment in equipment that would have little to no use to the Town for the vast majority of the year is not recommended by staff, however, a limited number of specialized pieces of new equipment could allow the Town to more rapidly respond to major snow events.

The Town of Leesburg has four departments that have snow removal equipment. The Department of Public Works and Capital Projects is the lead department for all snow clearing operations. The Airport, Parks and Recreation, and Utility Departments also have snow clearing

capabilities to maintain their own operations. During major storms, including Jonas, all of the departments work together to share resources, both equipment and labor, to complete the clearing mission.

The following table shows the Town's current snow clearing assets.

Snow Removal Assets Owned by the Town:		
Source:	Description:	Quantity:
Public Works Department	10 Ton Dump Truck with Plow/Spreader	5
	8 Ton Dump Truck with Plow/Spreader	4
	2 Ton Dump Truck with Plow/Spreader	3
	Pickup with Plow	3
	Backhoe	1
	John Deere Tractors with plows	4
	Rubber Tire Loader with Blower	1
	Skid Steer Loader	1
	Utility Cart Mounted Blower	3
	Walk Behind Snow Blower	6
Utility Department		
UMD	Dump Truck with Plow	1
UMD	Backhoe	2
UMD	Skid Steer Loader	1
UMD	Snow blower 30"	1
WSD	1 Ton Pickup with Snow Plow	1
WSD	22 HP John Deere Tractor with bucket	1
WSD	Snow blower 30"	1
WPCD	GMCC7500 Dump Truck with plow	1
WPCD	Ford F450 Stake Body with snow plow	1
WPCD	Case international 385 with bucket & rear blade	1
WPCD	Cub Cadet 3184 with snow plow	1
WPCD	Snow Tek 24" Snow Blower	1
WPCD	Husqvarna Snow Blower	1
Parks and Recreation Department	Skid Steer Loader	1
	Utility Cart Mounted Blower	1
Leesburg Executive Airport	Rubber Tire Loader with Plow, Snow Blower, Broom & Bucket attachments	1
	Pickup with Plow	2
	Trackless with Plow and Snow Blower attachments	1
	Tractor with plow attachment	1

Contractor Resources	Caterpillar 980 front end loaders	2
	L-90 front end loaders	5
	Rubber tire backhoes with front buckets	4
	Bobcats	2
	Quad Axle Dump Truck with Plow	7
	1 Ton Pickup with Plow	5
	Tandem Axle Dump Truck with Plow	1

## **Pre-Planning**

By early in the week of the storm, weather models were pointing to the strong likelihood of a major snow event. Public Works staff prepared equipment by mounting plows, loading sand and salt, coordinating staff schedules, and notifying contractor support. Because of the anticipated severity of the storm, additional resources were contacted including site contractors on local development projects and other contractors that had worked in Leesburg in the past. Four construction contracting companies committed to providing rubber tired loaders to assist in the clearing of streets, and an additional four companies were contacted during the storm to provide resources. As with all major snow storms, the Town relies on outsourced contractor plow trucks to assist with clearing. The Town has ongoing relationships with these companies, many of whom do work for the Town at other times of the year, such as street paving or capital project construction. The Town does not pay a retainage fee to keep these contractor plows available for Town snow clearing. In the future the Town is exploring having a more formalize agreement with snow removing contractors. Town staff is currently working with Virginia Department of Transportation to understand their contracting model to see if it is something that could be adapted for Town use.

Beginning last summer, Town staff had been developing a new snow management plan that created a “Snow Boss” that would oversee the Town’s snow clearing operation. This new design centralized the decision-making in a Snow Boss, a role that was alternated between the Director of Public Works and Capital Projects and the Public Works Manager. This efficiency meant that the Street Superintendent and the Assistant Street Superintendent could focus on managing the Town’s work crews and contractor support, and would not be tied up in other activities such as answering calls from the public, other agencies, or coordinating supplies or other logistical concerns. According to feedback from many employees, under the new Snow Boss framework, the departments worked closer together than at any time in the past.

As part of the plan, the Town also developed a “Snow Hotline”. Residents were able to call 703-777-SNOW to hear an updated recording of the Town’s snow clearing status and could stay on the line to talk with a Town staff member to report specific issues or ask questions. This hotline

was operational for 24 hours a day for five days during and after the storm, with an additional five days that it was operational for 12 hours a day. During this time, the hotline received 2,300 phone calls. Concerns or requests reported by callers to the Town's phone operator were logged into the brand new, Town developed, cloud-based GIS system. This program would take the information and map it in real-time. The Snow Boss, the Street Superintendent, and the Police Department were able to view the map from their operation centers or from remotely connected laptop computers in their trucks to see and respond to requests. The requests were ranked by priority to concentrate the Town's efforts on the most pressing needs. The system worked as planned, but due to the intensity and high call volumes from this unique storm, administrative staff were not able to keep up with posting the information as it was being reported. Staff adjusted to logging the information on paper and forwarding on high priority concerns verbally to the Snow Boss. This information was then later added to the GIS system. For future major snow storms the administrative staff will be increased to handle the anticipated call volumes.



**Snow GIS Map**

An overarching theme throughout this storm was Emergency Preparedness. Over the past several years, under the direction of former Police Chief Price, the Town's Emergency Management Team has participated in training, drills, and planning exercises that have cultivated an understanding and appreciation for emergency planning and what steps to take during an event. Several Directors have cited this training as being extremely beneficial throughout the storm and recovery process.

## **Storm Response**

As the first flake began to fall the Town's snow removal personnel were fully mobilized. The Department of Public Works, Utilities, Police, the Airport, and Parks and Recreation all had staff working around the clock clearing snow from public streets and essential facilities including the Police station and utility facilities. The Town made no deviation from its tried and tested approach for clearing streets in hierarchical



**Town Plow Truck Along South King Street Friday Evening at the start of the Storm**

order – most significant to least traveled. Using this model the greatest number of motorists can be served and critical routes are cleared first for emergency response and regional transportation needs. During the storm, and in the immediate hours that followed, Town and contractor equipment was concentrated on clearing the Town's primary roadways. It was essential that major routes such as Rt. 7, Rt. 15, the Rt. 15 bypass, Battlefield Parkway, Catoctin Circle, Plaza Street and Sycolin Road were properly cleared. This made regional transportation possible and it also made sure that these main roads were able to accept traffic volumes once the neighborhoods started to be cleared.

Several years ago the Town experimented with only partially clearing primary roadways before entering into the neighborhoods. The results were very negative. As neighborhoods were cleared, residents started venturing out on the public streets. This made it much more



**Bellwood Commons Shopping Center  
on Sunday Morning**

challenging for the plow drivers to do their work. It also compacted the snow that was still on the primary streets, creating difficult driving conditions for days after the storm. It also put drivers on the street before many shopping centers had cleared their sidewalks and parking lots. This meant lots of traffic with no place to go. Given those issues, for all future storms, the Town immediately went back to clearing primary roads first and then entering the neighborhoods. The clearing of primary roads first is a "best practice" that is used by the Virginia Department of

Transportation and most all other Department of Transportations across the country.

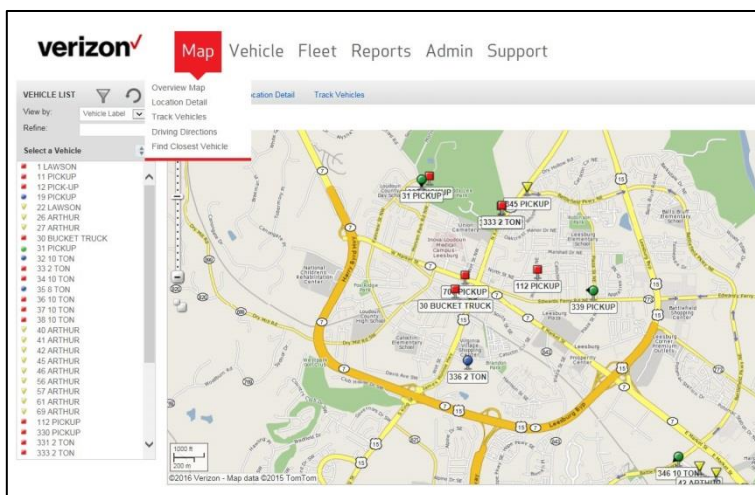
Along with Leesburg's own equipment, there were seven contractor quad axel dump trucks with plows provided by the Town, five 1-ton pickup trucks with Town plows clearing streets during the storm. However, the smaller trucks were pulled off the streets once the snow depths became too great. The Town also contracted with eight contractors to provide large rubber tired loaders, backhoes and skid steer loaders (Bobcat type) to clear streets where the snow was too deep for the Town's plows to clear. One contractor started working with the town at the start of the storm on Friday, two contractors began working with the Town crews first thing on Saturday morning with the balance of the contractors joining the effort on Sunday and Monday. These resources continued to work with Town crews until the Friday after the snow stopped falling. A few critical failures in the snow clearing effort came from an

outsourced contractor who had promised the Town that they would have 24 hour crews available to clear the streets using their plow trucks. Because the private contractor did not make plans to preposition their employees, the replacement drivers to relieve the first shift drivers were not able to get to their equipment. Having these trucks off the road, while the first shift drivers slept, cost the Town valuable clearing time. The Town also had verbal commitments from two heavy construction contractors that were to provide several large rubber tire loaders at the start of the storm. Both companies that promised equipment for Saturday morning did not arrive until Monday morning to support the Town. Had these contractors provided their equipment as they had promised, the Town would have been significantly ahead in clearing neighborhood streets.

Aside from clearing streets, Town staff members were responsible for clearing essential Town facilities. Staff made sure the Police Station remained accessible at all times. Staff also cleared the essential areas around the Water Plant and the Water Pollution Control Facility to ensure continuity of operations. Because Utility Department equipment was out on the streets assisting the clearing effort in neighborhoods, staff did get behind in clearing the Utility Maintenance Building and pump station locations. During major future storms, additional assets will need to remain with the Utilities Department so they can clear their essential infrastructure as quickly as possible.

The Town also had employees and contracted outside labor clear Ida Lee and specifically the tennis bubble. Because of the unique design of the soft frame of the building, heavy snow loads can cause significant damage, especially when the snow builds up around the base of the structure. While some residents saw the use of resources to clear the area around the tennis bubble as an inappropriate priority given the fact that at that time many neighborhood streets were not yet cleared, the reality is that if the snow had not been removed, significant structural damage to the facility would have occurred, resulting in thousands of dollars in repairs and the facility being closed for an extended period of time.

To keep track of all of the Town and contractor equipment, Public Works staff has installed GPS transmitters in each of the plow trucks using a Verizon system called Network Fleet. These units report back the speed and location of each vehicle. This information can be viewed on



**Network Fleet Allows Staff to Track Each Plow Truck in Real-Time**

laptops, tablets, and desktop computers. Having access to this real-time vehicle location information allows Town staff to be able to properly dispatch vehicles to address specific needs as well as keep contractors honest when it comes to billing for work that was performed.

While the Emergency Operations Center was only partially activated for this event, Senior Staff and Department Directors were in constant communication. Conference calls were established so that staff could share information on the storm and cleanup effort. The Town Manager held two Town Council Briefings using conference calls to update the Town's Elected Officials on the status of the Town's recovery operations. The public was invited to listen to these calls and in some cases participate in the discussion.

***The Downtown:*** As has been the Town's practice following large snow storms, once the primary roads were cleared and crews had entered the neighborhoods the Town would also focus on clearing the Downtown. On Tuesday the 26<sup>th</sup>, three days after the end of the storm, the Town sent a crew consisting of Town skid steer loaders, walk behind snow blowers and a loader mounted snow blower along with large outsourced contractor dump trucks to begin clearing the streets, crosswalks and sidewalks in the core downtown area. With such deep snow, the only way to safely provide public access to public buildings and downtown businesses was to haul the snow out. While some residents



**View looking south on King Street  
Sunday Morning**



**The Town's Rubber Tire Loader with Blower Used to  
Remove Snow from Downtown**

criticized this effort, the downtown's narrow streets and sidewalks and the limited areas to pile snow left the Town no other option. Not doing so would have created a major safety concern from pedestrians walking in the street and it would have also crippled the commercial and courts activity in the downtown. The General District and Circuit Courts had announced that they would be open on Tuesday. The County had already begun clearing Church Street and the Pennington and Semones Parking Lots to

accommodate the expected Court traffic. At the same time as the downtown was being cleared, all other Town assets were in the neighborhoods clearing streets. As it turned out, the Courts and County Government did not open until Wednesday under a liberal leave policy.

### ***High Pedestrian Traffic Areas:***

With a heightened awareness of the needs of those who have limited or no access to personal vehicles for transportation, for the first time ever, Town staff cleared heavily traveled pedestrian sidewalks along Edwards Ferry Road, Plaza Street, and East Market Street with loaders and the Town's loader mounted snow blower. Many of these same areas are also serviced by the fixed route bus system. These busses that are operated by a private contractor for Loudoun County suspended operations from Friday at the start of the storm through the following Tuesday. From Wednesday the 27<sup>th</sup> through Friday the 29<sup>th</sup>, residents in these areas could ride the bus to reach shopping centers as the Town worked to clear the sidewalks.

### ***Public Services:***

Through a combination of advanced planning and weather cooperation, essential utility services were provided to residents without interruption through the storm. Because the snow was dry and powdery, it did not put excessive weight on branches and utility poles. This meant that virtually all properties in the Town had consistent electric power service though the duration and aftermath of the storm. The Town's Utility facilities operated normally, however there was one water leak in a neighborhood that was repaired on Sunday evening following the storm. Because of the excessive snow on many of the residential streets, the Post Office was not able to provide their normal mail delivery operation.

Trash and Recycling Services were also suspended for the week following the storm. In order to assist the residents who wished to dispose of their trash, the Town established eight dumpster sites throughout the Town. Though a partnership with Loudoun County Public Schools, the Town was able to use the bus loops at six elementary schools for this purpose. Loudoun County Public School's General Service staff cleared the snow from the dumpster and travel areas to allow public access. The Town also set dumpsters at Ida Lee Park and Liberty Street Parking Lot for an extend period of time to collect trash.

The small staff of the Leesburg Executive Airport also worked around the clock to clear snow from that facility and to have the runway reopened as quickly as possible. With the advanced prediction of the snow, several of the chartered



**Dumpster Location Map Used for Trash Collection  
at local schools**

jets that are based at this airport were flown out to avoid the storm. The airport crews used their equipment to clear the runway, ramps and hangar areas, and contracted support came in to help with the final clearing of the parking lot and sidewalks. Once the majority of the airport was cleared, the loader was used by Public Works to assist in the clearing of other areas of the Town.

## **Financial Impact**

Cleaning up after a storm of this magnitude comes at a significant cost. Localities throughout the region spent more than their total annual snow budget on this one storm.

The Town of Leesburg includes a modest snow removal budget in the Department of Public Works and Capital Projects each year. It has been the practice of the Town to budget for two 8-12 inch snow events, if additional or larger storms occur, the department receives a supplemental appropriation from the Town Council to cover the cost overruns above the \$125,000 budget. At no time does the Town suspend snow clearing operations because of funding constraints.

The Town's response to Winter Storm Jonas far exceeded the annual snow removal budget. The Town spent a total of approximately \$696,000 in additional funds beyond its normal daily operations on this storm. Of this total amount, \$645,915 was spent from General Fund operations. Cost incurred by Utility Fund operations were \$50,515. For a more detailed accounting please consult Appendix B of this report.

The Town is working in partnership Loudoun County Emergency Management staff to seek potential reimbursements for eligible storm costs from the Federal Emergency Management Agency. Any reimbursements are unlikely in the current fiscal year.

## **Regional Response and Cooperation:**

Following the storm the Town reached out to the Virginia Department of Transportation and Loudoun County staff to discuss the regional response to the storm. The Town received high marks from both the County and VDOT on its response to the storm. As we all know, all agencies in Northern Virginia were facing the same challenges. The Town has been and will continue cultivating close working relationships with key Loudoun County and VDOT staff. All agencies realize that when big storms hit we all must work together and there is a strong understanding between all parties that if one of us needs help we will all support each other in any way possible. In this storm, the Town was ahead of VDOT in the clearing effort, so by the time that contractor support was available from VDOT to assist Leesburg, the Town had already cleared the streets. Through communications with VDOT, the Town learned that it is VDOT's

policy during these significant snow events to only clear one lane in and one lane out of neighborhoods. They do not clear the street curb to curb. Since all public roads located in Loudoun County are maintained by VDOT, the County has very limited snow clearing equipment. The assets they do have are used for clearing County facilities such as park and ride lots, community centers, fire stations, and parks and recreation facilities. After the storm, once the County realized that clearing such a significant amount of snow in a realistic amount of time was beyond the County's capabilities with their equipment, they reached out to Virginia's Department of Emergency Management to identify out of state contractor support to assist in the cleanup effort.

### **Outcomes and Next Steps:**

Through the dedication and determination of extremely hard working Town staff, Leesburg's essential services continued uninterrupted before, during, and after the storm. Public Works crews conducted continuous snow removal operations for 175 hours following the storm. The Town's water and wastewater operations ran uninterrupted throughout the entire storm, and the Police Department provided uninterrupted service to the Town residents. Even with these successes, a great deal was learned from responding to this extreme storm. The areas of focus listed below outline where the Town will spend time and attention to prepare for the next "big event".

### ***Areas of Focus:***

***Enhanced Interagency Communication*** – The Town has a strong working relationship with Loudoun County, the Virginia Department of Transportation (VDOT), and other localities in the region. Throughout this storm, staff was communicating with County officials to coordinate mutual aid. During future major storm events, the Town intends to enhance this communication by stationing a Town staff member at the Loudoun County Emergency Operations Center. Having this face-to-face liaison position will expedite communications between the County, VDOT, and the Town.

***Partnerships*** – Throughout this storm, the Town was in communication with Loudoun County officials and both the Town and County provided mutual aid to each other. For example, the Town's airport rubber tire loader with snow blower attachment was requested by the County to clear a path to the National Conference Center so County staff could get out from their lodging to work the storm. During the cleanup, the County sent backhoes and operators to help the Town clear streets. Two weeks following the storm, the Town initiated a meeting at Town Hall between VDOT and Loudoun County to discuss ways in which both agencies could provide more support to the Town during winter storm events. The Town heard from both the County and VDOT that the Town's clearing operations were very successful and were ahead of

VDOT's clearing schedule. During this event, VDOT and the County were experiencing the same issues that were facing the Town. Similar to Leesburg, VDOT did not have enough of the large equipment needed to clear a three foot snowfall in the same time frame that they can clear smaller storms. Despite the belief held by some, the County and VDOT were not able to send more equipment to help with the Town's clearing efforts. To supplement the County's needs, they requested equipment from large contractors located outside of Virginia through the Commonwealth of Virginia's Department of Emergency Management. Town staff was invited to a meeting by Loudoun County to meet their contractor who supplied this equipment so the Town can more fully participate in this program in the future, should the need arise. These services to bring in out of state heavy equipment come with significant costs, but are a viable option during significant events. Town staff has also met with VDOT staff to better understand VDOT's policies and procedures regarding the contracting of snow clearing contractors. Unlike the Town, the vast majority of VDOT snow clearing assets comes from private contractors hired annually by the State.

***Communicating Reasonable Expectations and Cooperation from Residents, Property Management Companies and Business Owners*** – The Town staff provided more public

communication during this storm than any other storm in Leesburg history through platforms such as the Town website, Facebook, Twitter, press releases, and the Snow Hotline, yet some residents still did not hear the message or follow the Town's recommendations. Despite the fact that the severity of the storm was predicted days in advance, many residents held unreasonable expectations of what the Town, the County, and VDOT's snow clearing capabilities were for a three foot



**Narrow Clearing Due to Cars Park on the Street**

snowstorm. During future events, Town staff and elected leadership must partner with County staff and elected officials and VDOT representatives in advance of the storm to provide a unified voice that explains what service level residents can expect from their government. At the Town's request, a joint press conference was held on the Tuesday morning following Jonas to provide a citizen update from County, Town, and VDOT leadership. This can be enhanced by having a press conference in advance of a pending severe storm.

Residents can also do more to assist the Town in the clearing operation. Many residents left vehicles parked on public streets. While this is permitted outside of snow emergency routes, having vehicles or other obstructions such as trailers and basketball hoops in the street, makes it significantly harder to clear the snow. Trucks and other clearing equipment must move

slower and cannot clear as wide a path. Had residents moved vehicles to driveways and parking lots, the Town would have been able to be much more effective in clearing the full width of Town streets.

Many commercial shopping centers and apartment complex management companies can also do more to help clear sidewalks, trails and entrances to their facilities. The Town Code currently requires that all property owners clear sidewalks that are adjacent to the public right of way. While this storm was unique in size, the Town still found many large property management companies not willing to clear what was required of them. Because of the size of this storm, Town staff was fully consumed in the clearing effort and was not able to issue formal violations to properties who did not follow the ordinance, but many notices were hand delivered to businesses and residential properties asking for their cooperation and compliance.

***Contractor Coordination*** – In all winter storms where snow plowing is needed, the Town relies on support from hired contractors to supplement the Town’s staff and equipment. During major snow storms, the need for contractor equipment increases. The Town is currently working with VDOT and Loudoun County to better understand their models for enlisting contractor support. While the Town is not in a financial position to rely on contractors in the same way that the County and VDOT can, there are lessons to be learned from those two agencies.

***Town Equipment Resources*** – While purchasing significant amounts of large, expensive equipment to be used for clearing rare and historic snowfalls is impractical, the Town should consider purchasing a small amount of specialty of equipment that can make the Town more effective in deep snow and in many cases this equipment could also be used at other times throughout the year by Town staff. An additional dump truck and plow, more skid steer loaders and backhoes, and specialized equipment such as a “V” plow would all help to expedite the clearing process.



**V-Plow for Clearing Deep Snow**



**Tandem Axel Dump Truck**



**Skid Steer with Heavy Duty  
Blower Attachment**

***Town Human Resources*** – With a limited public works staff that has not grown in proportion to the overall Town population or street lane miles, the Town must look at finding other ways to engage Town staff that is not typically activated during major weather events. The Town is also working on enhancing the support provided to Public Works from the Parks and Recreation and Utility Departments. Staff members from both of these departments assist in snow clearing operations once their own department’s critical facilities are cleared, but more can be done to better leverage our resources.

This year the Street Superintendent was contacted by some experienced Town retirees interested in helping with snow clearing operations. At the time, we did not have a mechanism to hire them on the spot. Temporary arrangements were made using the Town Manager’s emergency powers, but staff has since worked with Human Resources to research the ability to advertise for flexible part time staff that could be used on an “on call” basis for snow operations for plows or other equipment where operator help is needed.

## **Conclusion**

The impact of Winter Storm Jonas on Leesburg was unlike any other in modern memory. No one currently working for the Town had ever experienced a storm that dropped as much snow in as short an amount of time as this event. The snow fall totals combined with blizzard conditions made clearing roadways an extremely challenging undertaking. Despite the significant obstacles created by this storm, the Town staff worked extremely hard and came together to provide the best service possible to the Town’s residents.

It should be noted that even with the extreme conditions and the large amounts of oversized and difficult to maneuver equipment used to clear the snow, only two minor accidents occurred. A Town plow damaged a side view mirror on a vehicle parked on the street, and a piece of contractor equipment hit a passenger vehicle on a street – the driver of the car was found to be at fault.

Although it is not likely that Leesburg will be faced with a storm of this intensity in the near future, the Town’s staff did learn a great deal from the experience. New methods of communication, partnerships both internally and externally, the use of technology, and operational efficiencies have all been enhanced as a result of lessons learned from this historic storm.

## **APPENDIX A:**

### **Storm and Storm Cleanup Timeline:**

#### **Thursday, January 21, 2016**

- Town Emergency Management staff met at the Police Department to be briefed on the latest storm developments and to review storm procedures and department by department preparedness.
- Governor McAuliffe declared a State of Emergency in advance of the Storm.

#### **Friday, January 22, 2016**

- Public Works staff began snow operations at 7:00am.
- Snow Emergency was declared by the Town at 7:00 am.
- Town Government (non-essential staff) closed at 12:00pm (same as Loudoun County Gov't).
- Loudoun County Public Schools closed for the full day.
- First snowflakes started falling around 12:30pm.
- Snow hotline was operational at noon.
- Loudoun County suspended fixed route bus service (Safe-T rides) at 1:00pm.
- 12-hour shift work by the Street Division started at 7:00 am.

#### **Saturday, January 23, 2016**

- Public works staff operating on two, 12 hour shifts.
- Snow hotline operational.
- Airport Manager provided mutual aid at the request of Loudoun County to take the airport rubber tire loader with blower attachment to provide access for County emergency personnel who were stranded at their accommodations located at the National Conference Center.
- Snow ended around 10pm.
- 34 inches of total snow on the ground.
- Snow removal staff and equipment worked through white-out conditions.
- Contractor equipment joined the snow removal operations (2 – Caterpillar 980 front end loaders).

#### **Sunday, January 24, 2016**

- Public Works staff operating on two, 12 hour shifts.
- Snow hotline operational.
- Additional contractor equipment joined the snow removal operations (one L-90 front end loader) by the start of second shift at 7 pm.

**Monday, January 25, 2016**

- Town and County Government Closed.
- Loudoun County Public Schools closed for the full day.
- Public Works staff operating on two, 12 hour shifts.
- Snow hotline operational.
- Additional contractor resources joined in the snow removal effort, 3 large front end loaders.
- Town crews along with contractor resources started into neighborhood streets.
- Special Town Council teleconference meeting for snow clearing update from

**Tuesday, January 26, 2016**

- Loudoun County Public Schools closed for the full day.
- Town and County Government Closed.
- Ida Lee Recreation Center Reopened.
- Public Works staff operating on two, 12 hour shifts.
- Snow hotline operational.
- Joint County/Town/VDOT press conference at Government Center to update citizens.
- Leesburg Executive Airport runway opened at 12:00pm for general aviation aircraft. Limited snow cleared width of runway prevented jet traffic.
- Town crews along with contractor resources continued in the neighborhoods.

**Wednesday, January 27, 2016**

- Loudoun County Public Schools closed for the full day.
- Town and County Government open with liberal leave.
- Public Works staff operating on one 12 to 15 hour shift with smaller overnight crew
- Snow hotline operational.
- Additional contractor equipment joined the snow removal effort, 4 backhoes from Loudoun County contractor, 2 skid steer loaders.
- Sidewalk clearing operation using town snow blower started in the downtown area for metered parking areas.
- Town crews had a lane to a lane and a half cleared on all residential streets by the end of first shift.

**Thursday, January 28, 2016**

- Loudoun County Public Schools closed for the full day.
- Town and County Government open with liberal leave.
- Temporary dumpers were positioned at eight locations through-out the Town by 9am for citizen use. Dumpsters were traded out as they became full.

- Public Works staff operating on 12 to 15 hour shifts with smaller overnight crew.
- Snow hotline operational.
- Large Cat 980 loaders stopped working snow removal effort.
- Sidewalk clearing operation continued in downtown metered space areas.

#### **Friday, January 29, 2016**

- Loudoun County Public Schools closed for the full day.
- Town and County Government Open.
- Special Town Council meeting by conference call to update officials on snow clearing effort.
- Public Works staff operating 12 to 15 hour shift and smaller overnight crew.
- Snow hotline operational, and calls had significantly tapered off.
- All remaining large contractor equipment stopped working the snow removal effort. One large loader kept on snow removal effort.
- Sidewalk clearing operation continued in high pedestrian areas on Market Street, Plaza Street and Edwards Ferry Road.

#### **Saturday, January 30, 2016**

- Temporary dumpsters removed from Elementary School locations to prepare for schools opening on Monday. The dumpsters at Liberty Street Parking Lot and Ida Lee Park remained until Wednesday, February 3, 2016.
- Public Works staff operating on one, 8 hour shift, with overnight on-call.
- Snow hotline stopped, and on-line form reporting for snow issues was activated.

#### **Sunday, January 31, 2016**

- Public Works staff operating on one, 8 hour shift, with overnight on-call.
- On-line form reporting for snow issues was available 24/7.

#### **Monday, February 1, 2016**

- Snow Emergency lifted by Town Manager effective at 7:00am.
- Loudoun County Public Schools opened with a two hour delay.
- Full curb side trash and recycling service resumes for Town residents.
- On-line reporting by residents used.

**APPENDIX B:**

Cost incurred for Winter Storm Jonas over and above the amounts already included in the operating budgets:

General Fund Costs		
<b>Salaries &amp; Benefits</b>		
Public Works	\$	142,931.29
Other Salaries		117,194.78
<b>Total Salaries and Benefits</b>		<b>260,126.07</b>
<b>Other Expenses</b>		
Lodging & Meals		7,353.01
Contracted Snow Removal		339,270.50
Repairs & Supplies		164,165.43
<b>Total Other Expenses</b>		<b>510,788.94</b>
Budgeted Snowstorms		(125,000.00)
<b>Total General Fund</b>	<b>\$</b>	<b>645,915.01</b>
Utility Fund Costs		
<b>Salaries &amp; Benefits</b>		
Other Salaries	\$	31,560.59
<b>Total Salaries and Benefits</b>		<b>31,560.59</b>
<b>Other Expenses</b>		
Lodging & Meals		637.41
Repairs & Supplies		18,317.96
<b>Total Other Expenses</b>		<b>18,955.37</b>
<b>Total Utility Fund</b>		<b>50,515.96</b>
<b>Total General Fund &amp; Utility Fund</b>	<b>\$</b>	<b>696,430.97</b>

Appendix C: Snow Clearing Routes and Responsibilities

